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EG&G ROCKY FLATS

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Richard J. Schassburger
Acting Director
Environmental Restoration Management
DOE, RFO

Please find enclosed a draft copy of the Expedited Action (EA) for Operable Unit 2. The EA requested by the Department of Energy, Rocky Flats Office (DOE, RFO) involves the excavation of Non-Aqueous Phase Liquid.

If you have questions regarding this correspondence, please contact Peter J. Laurin (extension 8702) or Dennis L. Schubbe (extension 8709) of Remediation Project Management.

Wanda S. Busby

Wanda S. Busby
Director
Remediation Project Management

DLS:jlm

Orig. and 1 cc - R. J. Schassburger

**Enclosure:
As Stated**

cc:
S. R. Grace - DOE, RFO
M. H. McBride - " "
J. L. Pepe - " "

CLASSIFICATION:		
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NCI	X	X
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REPLY TO RFP CC NO:

SECTION ITEM STATUS
☒ OPEN ☐ CLOSED
☐ PARTIAL

APPROVALS:
S8: [Signature] DS:
IG & TYPIST INITIALS

16-59 (Rev. 9/92)

ADMIN RECORD
BZ -A-00114

**Operable Unit No. 2
Draft Expedited Action**

1.0 OBJECTIVE

This Expedited Action (EA) is specifically for the removal of non-aqueous phase liquid (NAPL) that was encountered while drilling bore hole B10191 in Trench T3 (IHSS 110). The EA is not intended to characterize or remediate the site. Information obtained during this EA will be used to determine if further removal actions are warranted prior to site remediation.

2.0 BACKGROUND INFORMATION

During the subsurface soil sampling of Trench T3 (IHSS 110) NAPL was encountered while drilling bore hole B10191 at the western end of Trench T3. The evaluation of sampling results obtained from bore holes B10191 and B24793 indicate that NAPL free product is present from 4 to 8 feet below the ground surface.

Two scenarios explaining the physical occurrence of NAPL in the subsurface have been considered in order to develop the approach proposed for recovery of NAPL free product. The scenarios listed below are based on information that is available in the HRR (DOE 1992a) and other OU 2 documents (i.e., TM 1).

- 1) The NAPL is uncontained liquid (e.g., lathe coolant, cutting oil, solvent, etc.) disposed of via dumping into the trench when at least a portion of the trench had been backfilled to a depth of approximately four feet below the ground surface.
- 2) The NAPL is containerized liquid (i.e., drummed) and buried within the trench near the depth of four feet below the ground surface.

3.0 FIELD OPERATIONS ASSUMPTIONS

The following assumptions are necessary to limit the scope of field operations for the EA. If circumstances develop that show more effort is

necessary, a second phase will be required.

If the evaluation of the results of the magnetic and ground penetrating radar surveys (discussed in section 4.1) indicate that intact drums may be present within Trench T3, this early action will require revision to insure protection of workers.

Soil may be moved within the confines of the excavation without removal and subsequent treatment as waste. The excavation shall be defined in plan view as the areal extent of the surface soil removed. The objective of this EA is specifically to remove NAPL. Removal of soil from the excavation that does not contain NAPL will be minimized. The soil which does not contain NAPL and which may contain other contaminants, will be left in the excavation to be remediated using Soil Vapor Extraction (SVE) or other appropriate remediation actions. NAPL containing soil is defined as soil that has free phase liquid. The NAPL determination will be made in the field.

The volume of soil and other material (such as crushed drums, boards and other debris) removed from the excavation during this Early Action shall not exceed ten cubic yards. The depth of the excavation shall not exceed eight feet.

4.0 FIELD OPERATIONS

4.1 Geophysical Investigation

Magnetic and ground penetrating radar surveys will be performed over Trench T3 to determine the potential for buried intact drums.

4.2 Excavation

A rubber tired backhoe will be used for the excavation. Excavated material that is not contaminated will be stockpiled on plastic sheeting outside of the excavation. All contaminated material that is removed from the excavation shall be placed in storage containers. Contaminated material is defined in sections 4.3 through 4.5. The contaminated material shall be used in site wide treatability studies if applicable.

If intact drums are discovered during excavation of the trench all work

will stop and appropriate action shall be taken to ensure that Health and Safety requirements are met. Appropriate action based on evaluation of site conditions shall be implemented. A decision tree outlining appropriate action is attached (Figure 1)

4.3 Backfilling

The trench will be backfilled with the excavated clean soil as defined in sections 4.3 through 4.5. Any additional clean fill that will be required will be sampled and analyzed for contaminants prior to placement in the excavation. Contaminated fill material will not be placed in the excavation.

4.4 Field Screening and Head Space Analysis for Volatile Organic Compounds

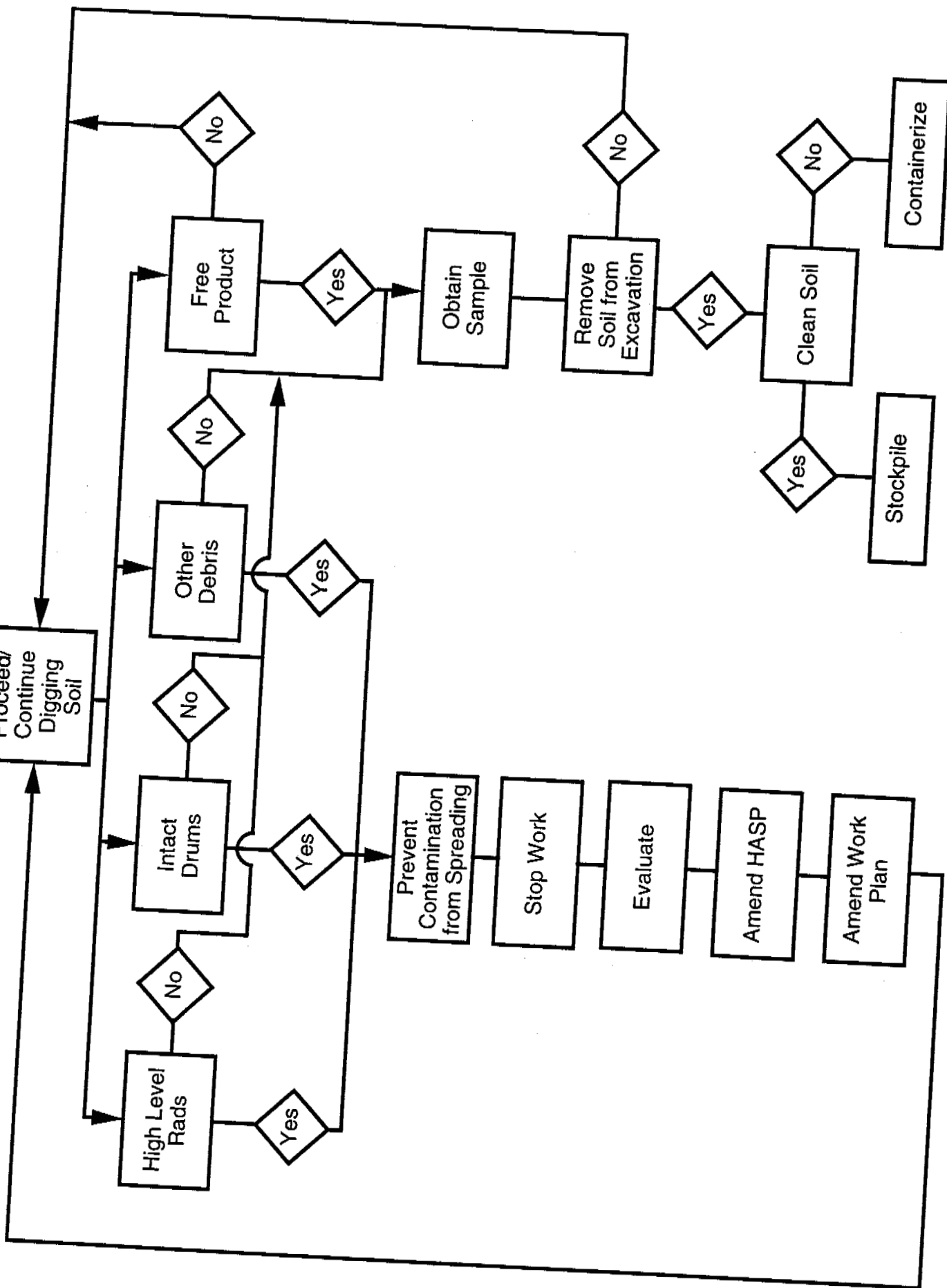
Two field screening methods shall be used for determining VOC contaminated material (i.e., initial screening and second screening methods). Soil will be considered contaminated if organic vapors greater than ten PPM are detected during either method. An initial screening for soil contamination shall be performed in the field using a portable organic vapor analyzer (OVA). The initial screen will be done as soon as possible after soil or other material has been excavated. Each backhoe bucket full of recently exposed material or the equivalent volume will be screened by drawing vapors from the soil surface into the OVA.

The second screening method will be a head space analysis of a sample obtained from each cubic yard of both containerized contaminated material and stockpiled uncontaminated material. The head space analysis is a more accurate field technique that will be used to confirm the initial screening method. An OVA will be used to analyze the vapors in the head space above soil contained in partially filled glass jars sealed with aluminum foil.

4.5 Field Screening for Radionuclides

Each backhoe bucket full of soil or the equivalent volume will be screened for Radionuclides. Radionuclide contamination will be determined with portable beta-gamma and alpha detection instruments. Radionuclide contaminated soil and other material that is removed from the excavation

SOIL EXCAVATION DECISION TREE



OU 2 EXPEDITED ACTION SCHEDULE

ID	Name	Duration	Scheduled Start	Scheduled Finish	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
					Qtr 1	Qtr 2	Qtr 3	Qtr 4
1	1 SOW & REQ PREPARATION	18d	3/1/94	3/24/94				
2	1.1 PREPARE SOW/OC/SOLE SOURCE FOR EA IMPLEMENTATION	5d	3/1/94	3/7/94				
3	1.2 QA REVIEW SOW	1d	3/8/94	3/8/94				
4	1.3 PROCUREMENT REVIEW SOW	1d	3/8/94	3/8/94				
5	1.4 ADDRESS SOW COMMENTS	1d	3/9/94	3/9/94				
6	1.5 OBTAIN LABOR RATES AND PREPARE COST ESTIMATE	2d	3/10/94	3/11/94				
7	1.6 OBTAIN MANAGER APPROVAL OF SOW	1d	3/10/94	3/10/94				
8	1.7 NEPA EVALUATION	10d	3/11/94	3/24/94				
9	1.8 DRAFT PURCHASE REQUISITION	1d	3/1/94	3/1/94				
10	1.9 OBTAIN APPROVALS OF PROCUREMENT PACKAGE	2d	3/2/94	3/3/94				
11	1.10 SUBMIT PROCUREMENT PACKAGE TO PROCUREMENT	0d	3/3/94	3/3/94				
12	2 PROCUREMENT PROCESS	35d	3/4/94	4/21/94				
13	2.1 PROCUREMENT ACCEPTANCE OF PROCUREMENT PACKAGE	1d	3/4/94	3/4/94				
14	2.2 REQUEST FOR PROPOSAL TO SUBCONTRACTOR	2d	3/7/94	3/8/94				
15	2.3 CONTRACTOR DEVELOPS PROPOSAL	21d	3/9/94	4/6/94				
16	2.4 PROCUREMENT REVIEW AND SUBMIT PROPOSAL TO RPM	2d	4/7/94	4/8/94				
17	2.5 RPM TECHNICAL EVALUATION OF PROPOSAL	2d	4/11/94	4/12/94				
18	2.6 COST ANALYSIS BY PURCHASING SUPPORT GROUP	2d	4/7/94	4/8/94				
19	2.7 DOE-RFO REVIEW AND APPROVE COST ANALYSIS	5d	4/11/94	4/15/94				
20	2.8 PROCUREMENT DEVELOPS NEGOTIATION PLAN	1d	4/18/94	4/18/94				
21	2.9 CONTRACT NEGOTIATIONS	1d	4/19/94	4/19/94				
22	2.10 PROCUREMENT CONTRACT AWARD PROCESSING	2d	4/20/94	4/21/94				
23	2.11 CONTRACT AWARD	0d	4/21/94	4/21/94				
24	3 OBTAIN PERMITS AND MOBILIZE	50d	4/22/94	6/30/94				
25	3.1 EA IMPLEMENTATION PLAN	25d	4/22/94	5/26/94				
26	3.1.1 SUBCONTRACTOR PREPARE IMPLEMENTATION PLAN	15d	4/22/94	5/12/94				
27	3.1.2 INTERNAL REVIEW EA IMPLEMENTATION PLAN	2d	5/13/94	5/16/94				
28	3.1.3 SUBMIT EA IMPL PLAN TO DOE	0d	5/16/94	5/16/94				
29	3.1.4 DOE REVIEW DRAFT EA IMPLEMENTATION PLAN	5d	5/17/94	5/23/94				
30	3.1.5 ADDRESS DOE COMMENTS ON DRAFT EA IMPL PLAN	3d	5/24/94	5/26/94				
31	3.1.6 SUBMIT DRAFT EA IMPL PLAN TO EPA/CDH	0d	5/26/94	5/26/94				
32	3.2 FINAL EA IMPLEMENTATION PLAN	20d	5/27/94	6/23/94				
33	3.2.1 EPA/CDH REVIEW DRAFT EA IMPL PLAN	10d	5/27/94	6/9/94				
34	3.2.2 ADDRESS EPA/CDH COMMENTS ON DRAFT EA IMPL PLAN	5d	6/10/94	6/16/94				
35	3.2.3 SUBMIT FINAL EA IMPL PLAN TO DOE/EPA/CDH	0d	6/16/94	6/16/94				
36	3.2.4 DOE/EPA/CDH REVIEW FINAL EA IMPL PLAN	5d	6/17/94	6/23/94				
37	3.2.5 OBTAIN APPROVAL EA IMPLEMENTATION PLAN	0d	6/23/94	6/23/94				
38	3.3 HASP PREP & APPROVAL	41d	4/22/94	6/17/94				
39	3.3.1 DRAFT HASP PREP & SUBMITTAL	21d	4/22/94	5/20/94				
40	3.3.2 EG&G REVIEW HASP	10d	5/23/94	6/3/94				
41	3.3.3 ADDRESS HASP COMMENTS	5d	6/6/94	6/10/94				
42	3.3.4 HASP APPROVED	0d	6/10/94	6/10/94				
43	3.3.5 HASP & SOP TRAINING	5d	6/13/94	6/17/94				
44	3.4 IWCP PREPARE AND APPROVAL	20d	4/22/94	5/19/94				
45	3.4.1 PREPARE IWCP	10d	4/22/94	5/5/94				
46	3.4.2 IWCP INTERNAL REVIEW	5d	5/6/94	5/12/94				
47	3.4.3 IWCP COMMENT RESOLUTION	5d	5/13/94	5/19/94				

Project: OU 2 EA SCHEDULE
Date: 2/10/94

Critical  Progress  Summary 
Noncritical  Milestone  Rolled Up 

OU 2 EXPEDITED ACTION SCHEDULE

ID	Name	Duration	Scheduled Start	Scheduled Finish	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
					Qtr 1	Qtr 2	Qtr 3	Qtr 4
48	3.4.4 IWCP APPROVAL	0d	5/19/94	5/19/94		◆		
49	3.5 EQUIPMENT MOBILIZATION	9d	6/20/94	6/30/94			■	
50	3.5.1 PREPARE FOR QA READINESS REVIEW	5d	6/20/94	6/24/94			■	
51	3.5.2 PERFORM OPERATIONAL READINESS REVIEW	1d	6/27/94	6/27/94			■	
52	3.5.3 EQUIPMENT MOBILIZATION	3d	6/28/94	6/30/94			■	
53	4 PERFORM EA FIELDWORK	18d	7/1/94	7/26/94			■	
54	4.1 GEOPHYSICAL SURVEYS	5d	7/1/94	7/7/94			■	
55	4.2 EXCAVATING AND SAMPLING	10d	7/8/94	7/21/94			■	
56	4.3 DEMOBILIZATION	3d	7/22/94	7/26/94			■	
57	5 LABORATORY ANALYSES	35d	7/22/94	9/8/94			■	
58	5.1 STORE/SHIP/SCREEN SAMPLES	5d	7/22/94	7/28/94			■	
59	5.2 HOT LABORATORY SAMPLE TURNAROUND	30d	7/29/94	9/8/94			■	
60	5.3 COLD LABORATORY SAMPLE TURNAROUND	30d	7/29/94	9/8/94			■	
61	6 DATA VALIDATION & RFEDS	35d	9/9/94	10/27/94			■	
62	6.1 RFEDS	30d	9/9/94	10/20/94			■	
63	6.2 DATA VALIDATION	5d	10/21/94	10/27/94			■	
64	7 PREPARE DRAFT EA REPORT	40d	9/9/94	11/3/94			■	
65	7.1 PREPARE EA DRAFT REPORT	21d	9/9/94	10/7/94			■	
66	7.2 INTERNAL REVIEW OF DRAFT EA REPORT	5d	10/10/94	10/14/94			■	
67	7.3 ADDRESS INTERNAL COMMENTS DRAFT EA REPORT	5d	10/17/94	10/21/94			■	
68	7.4 SUBMIT DRAFT EA REPORT TO DOE	0d	10/21/94	10/21/94			■	
69	7.5 DOE REVIEW DRAFT EA REPORT	5d	10/24/94	10/28/94			■	
70	7.6 ADDRESS DOE COMMENTS ON DRAFT EA REPORT	4d	10/31/94	11/3/94			■	
71	7.7 TRANSMIT DRAFT EA REPORT TO AGENCIES	0d	11/3/94	11/3/94			■	
72	8 PREPARE FINAL EA REPORT	20d	11/4/94	12/1/94			■	
73	8.1 EPA/CDH REVIEW DRAFT EA REPORT	10d	11/4/94	11/17/94			■	
74	8.2 ADDRESS EPA/CDH COMMENTS ON DRAFT EA REPORT	5d	11/18/94	11/24/94			■	
75	8.3 SUBMIT FINAL EA REPORT FOR DOE/EPA/CDH APPROVAL	0d	11/24/94	11/24/94			■	
76	8.4 OBATIN EA REPORT APPROVAL	5d	11/25/94	12/1/94			■	
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Project: OU 2 EA SCHEDULE

Date: 2/10/94

Critical Noncritical Progress Milestone Summary Rolled Up 

INTEROFFICE CORRESPONDENCE

DATE: February 08, 1994

TO: D. L. Schubbe, Remediation Projects Management, Bldg. 080, X8709

FROM: J. L. Anderson, Radiological Engineering, Bldg. 080, X6974

SUBJECT: RADIOLOGICAL ENGINEERING INITIAL REVIEW OF POSSIBLE HAZARDS IN THE
INDIVIDUAL HAZARDOUS SUBSTANCE SITE 110 - JLA-004-94

(a) G. W. Baughman ltr, to R. J. Schassburger, Pond Water Management
IM/IRA Information, March 3, 1993

This memorandum is to document discussions that have taken place between Radiological Engineering (RE) and Remediation Projects Management (RPM) regarding the possible excavation within Individual Hazardous Substance Site (IHSS) 110.

A preliminary review has been conducted by RE regarding the radiological hazards associated with the possible remediation effort of the 110 IHSS. According to the Historical Release Report (HRR), this burial trench (T-3) contains plutonium and uranium contaminated sewage sludge, flattened drums that once contained contaminated oils, and possibly contains contaminated water and lathe coolant. There are two reasons to believe that some or all of the contaminated coolant and water are located in IHSS 110.

1. During the installation of the Soil Vapor Extraction unit, the subcontractor discovered that there was free product (i.e. unencapsulated organic contaminants) present in the borehole. This would seem to confirm the presence of the contaminated lathe coolant or possible other undocumented organics in this trench.
2. There is also a reported source [Reference (a)] of tetrachloroethene in the east trenches that is being carried by the groundwater and then discharged into B-2 Pond. The 110 trench is one of the closest and the most upgradient to the B-2 Pond and could be the source of this contamination.

The major problem foreseen with this intended remediation will be if the hazardous solvents or oils are containerized in drums in the trench. Plutonium in solution, when in long term contact with plastics, hydrocarbons, or water, can cause radiolysis to occur. This process can result in the formation of hydrogen and oxygen gases and the possible generation of hydrochloric acid. These formations could result in overpressurization of the drums, creation of an explosive mixture within the drum, as well as loss of integrity of the drum itself.

D. L. Schubbe
JLA-004-94
February 8, 1994
Page 2

Hydrogen generation in plutonium contaminated wastes has been identified as a potential problem at another Department of Energy site, specifically at the Waste Isolation Pilot Project. If we do expect to find drums containing contaminated hydrocarbons, we might canvass this site and see how they have dealt with or plan to deal with this unique situation.

The materials removed from the excavation of this trench would have to be treated as a potential waste stream. All wastes generated would have to be packaged, labeled, and stored in accordance with all applicable plant policies and procedures that govern the waste handling activities.

Please contact me directly with any concerns or questions about the above correspondence. I may be reached at Extension 6974 or on Digital Page 3518.

cc:

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